

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

NETLIST, INC.,

Plaintiff,

v.

SAMSUNG ELECTRONICS CO., LTD., et al.,

Defendants.

Civil No. 2:22-cv-00293-JRG

JURY TRIAL DEMANDED

SAMSUNG'S NOTICE PURSUANT TO 35 U.S.C. § 282

Pursuant to 35 U.S.C. § 282, Defendants Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., and Samsung Semiconductor, Inc. (collectively, "Samsung"), provide notice that in the trial of the above-captioned matters, Samsung may rely on one or more of the prior art references identified in this Notice, either alone or in combination.

Samsung has already provided notice to Plaintiff Netlist, Inc. ("Netlist") of the identity of certain publications, patents, and persons within the ambit of § 282 through the pleadings and correspondence in this case, including, but not limited to, invalidity contentions, expert witness reports, testimony, responses to interrogatories, disclosures under Rule 26, the Discovery Order, and the Local Patent Rules, and material disclosed in trial exhibit lists. Samsung expressly incorporates herein by reference all of the publications, patents, and specification of persons within the ambit of § 282 previously cited in these pleadings, testimony, expert reports, correspondence and other materials. Samsung also reserves the right to rely on any description of the prior art within the specifications of the asserted patents or items of prior art cited on their face. Samsung reserves the right to amend and/or supplement this Notice to add items to this statement that were inadvertently omitted. In addition to each of the following identified prior

art references, Samsung may rely on the applicant's admitted prior art for each of the Asserted Patents.

I. Prior Art to Asserted 10,268,608

A. U.S. Patents

| Number | Filing Date | Issue Date | Named Inventors | Original Assignees |
|---------------|--------------------|--------------------|--|-----------------------------|
| 6,446,158 | May 17, 2000 | September 3, 2002 | Karabatsos, Chris | - |
| 7,024,518 | March 13, 2002 | April 4, 2006 | Halbert, John B.; Dodd, James M.; Lam, Chung; Bonella, Randy M.; Holman, Thomas J. | Intel Corporation |
| 8,054,664 | December 15, 2009 | November 8, 2011 | Harashima, Shiro; Tsukada, Wataru | Elpida Memory, Inc. |
| 8,111,565 | September 29, 2009 | February 7, 2012 | Kuroki, Reiko | NEC Electronics Corporation |
| 8,130,560 | November 13, 2007 | March 6, 2012 | Rajan, Suresh Natarajan; Smith, Michael John Sebastian | Google Inc. |
| 8,243,488 | October 11, 2011 | August 14, 2012 | Harashima, Shiro; Tsukada, Wataru | Elpida Memory, Inc. |
| 8,275,936 | September 21, 2009 | September 25, 2012 | Haywood, Christopher; Raghavan, Gopal; Xu, Chao | Inphi Corporation |
| 8,347,057 | August 13, 2010 | January 1, 2013 | Nishio, Yoji; Ono, Takao | Elpida Memory, Inc. |
| 8,462,535 | July 16, 2012 | June 11, 2013 | Harashima, Shiro; Tsukada, Wataru | Elpida Memory, Inc. |

B. U.S. Patent Application Publications

| Number | Filing Date | Publication Date | Named Inventors |
|---------------|--------------------|-------------------------|------------------------|
| 2001/0008006 | February 13, 2001 | July 12, 2001 | Klein, Dean A. |

| | | | |
|--------------|--------------|------------------|---|
| 2006/0277355 | June 1, 2005 | December 7, 2006 | Ellsberry, Mark; Sweere, Paul; Sansur, Michael; Stockton, Grant |
|--------------|--------------|------------------|---|

C. Non-Patent Publications

| Title | Publication Date | Page Nos. |
|--|------------------|-----------|
| Backus, John Backus (1924-2007) 1977 ACM Turing Award lecture | 1978 | All |
| Bohr, “30 Year Retrospective on Dennard’s MOSFET Scaling Paper” | 2007 | All |
| Brown Fundamentals of Digital Logic with VHDL Design, Third Edition | 2009 | All |
| Chen, “The VLSI Handbook, Second Edition,” | 2007 | All |
| Garrou et al “Handbook of 3D Integration” | 2008 | All |
| Haas, “Fully-Buffered DIMM Technology Moves Enterprise Platforms to the Next Level” authored by Jon Haas | 2005 | All |
| IEEE, The Authoritative Dictionary of IEEE Standards Terms, Seventh Edition | 2000 | All |
| Inphi, “Enabling Cloud Computing and Server Virtualization with Improved Power Efficiency” | 2010 | All |
| Inphi, “Inphi to Present at JEDEC's Server Memory Forum 2011” | 2011 | All |
| Jacob, Jacob, Memory Systems Cache, DRAM, Disk | 2008 | All |
| Johnson, “3D Packaging - A Technology Review” | 2005 | All |
| Laplace, Comprehensive Dictionary of Electrical Engineering, Second Edition | 2005 | All |
| Load Decoupling Twinbuffer for LD-DIMM | June 2008 | All |
| Markus, McGraw-Hill Electronics Dictionary, Fifth Edition | 1994 | All |
| Mead, “Introduction to VLSI Systems” | 1980 | All |
| Micron, “Micron Introduces a New Way to Increase Server Memory Capacity and Improve Performance”, | July, 2009 | All |
| Micron, “Micron's LRDIMM Redefines Server Memory Modules”, | July, 2009 | All |
| Moore, “Cramming More Components on Integrated Circuits” | 1965 | All |
| Moore, “No Exponential is Forever - But Forever Can Be Delayed.” | 2003 | All |
| Nasr, Rami “FBSIM and the Fully Buffered DIMM Memory System Architecture” | 2005 | All |
| Prince, “Semiconductor Memories” | 1983 | All |
| Scientific American | 1977 | All |
| Shannon “A Symbolic Analysis of Relay and Switching Circuits (M.S. thesis) | 1937 | All |

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|---|-------------------------|------------------|
| Tan, Wafer Level 3-D ICs Process Technology | 2008 | All |
| Turing, “On Computable Numbers” | 1936 | All |
| Vogt, “Fully Buffered DIMM (FB-DIMM) Server Memory Architecture: Capacity, Performance, Reliability, and Longevity” | 2004 | All |
| Washkewicz and JEDEC, DDR3 Memory Buffer - Buffer at the Heart of the LRDIMM Architecture | 2011 | All |
| Wulf, Bill Wulf “Hitting the Memory Wall: Implications of the Obvious.” | 1994 | All |

D. Prior Art Systems and Inventions Known or Used by Others¹

| Title/Description | Date of Use/Knowledge | Page Numbers |
|--|------------------------------|---------------------|
| “Technical Library” webpage of Kentron’s QBM Website | February 2005 | |
| Committee Item Number 0311.12, Proposed DDR4 DB Buffer Control Words, Second Showing | March 2012 | All |
| Committee Item Number 0311.13, Proposed DDR4 DB BCOM Protocol, Second Showing | March 2012 | All |
| Committee Item Number 0311.14, Proposed DDR4 DB Training Mode, Second Showing | March 2012 | All |
| Committee Item Number 142.62B, Proposed JEDEC Standard LRDIMM DDR3 Memory Buffer Specification, JESD82-xx v.0.95b, Committee Letter Ballot | September 2011 | All |
| Committee Item Number 158.01, Proposed DDR4 LRDIMM Proposal, 1st Showing | December 2010 | All |
| Committee Item Number 158.01, Proposed DDR4 LRDIMM Proposal, 2nd Showing | March 2011 | All |
| DDR3 DIMMs For Servers August 2008 JEDEC Meeting Item #2192.10 | August 27, 2008 | All |
| DDR4 LRDIMM Proposal (Item # 2222.01) | | All |
| Item # 151.01 iMB based DDR4 LR-DIMM Inphi datasheet for a DDR3 LRDIMM isolation Memory Buffer (iMB) | 2011 | All |
| JC-42.5 Minutes of Meeting No. 51 | March 5, 2002 | All |
| JC-42.5 Minutes of Meeting No. 56 | June 3-4, 2003 | All |
| JC-45 Minutes of Meeting No. 13 | Dec. 6-7, 2006 | All |
| JC-45 Minutes of Meeting No. 14 | March 7-9, 2007 | All |

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| JC-45 Minutes of Meeting No. 9 | Dec. 6-9, 2005 | All |
| JC-45, Kentron Informational Showing, Item #2144.00 | September 2006 | All |
| JEDEC presentation | December 1999 | All |
| JEDEC presentation | September 2000 | All |
| JEDEC presentation | September 2002 | All |
| JEDEC, "Server Memory Trends - Past and Future | 2011 | All |
| JEDEC, "Terms, Definitions, and Letter Symbols for Microelectronic Devices" (Standard JESD99B) | 2007 | All |
| JEDEC, Appendix X-Serial Presence Detect (SPD) for Fully Buffered DIMM (Standard 21-C) | 2007 | All |
| JEDEC, FBDIMM - Architecture and Protocol Standard (JESD206) | 2007 | All |
| JEDEC, FBDIMM Advanced Memory Buffer (AMB) (JESD82-20A) | 2009 | All |
| JEDEC, FBDIMM Specification - DDR2 SDRAM Fully Buffered DIMM (FBDIMM) Design Specification (JESD205) | 2007 | All |
| JEDEC, FBDIMM Specification - High Speed Differential PTP Link at 1.5 V (JESD8-18A) | | All |
| JEDEC, Fully Buffered DIMM Design for Test, Design for Validation (DFx) (JESD82-28A) | 2008 | All |
| JEDEC, Instrumentation Chip Data Sheet for FBDIMM Diagnostic Senselines (JESD82-22) | 2006 | All |
| JEDEC, PC133 SDRAM Registered DIMM Design Specification, Revision 1.4 (Standard 21-C) | 2002 | All |
| JEDEC, PC2-4200, PC2-3200 DDR2 Registered Mini-DIMM Design Specification, Revision 2.0 | 2006 | All |
| JEDEC, PC2-6400, PC2-5300, PC2-4200, PC2-3200 Registered DIMM Design Specification, Revision 4.04 | 2010 | All |
| Kentron presentation | 2004 | All |
| Kentron Quad Band Memory (QBM) QBM2 Overview: Technical Features | Dec. 30, 2004 | All |
| Kentron Quad Band Memory (QBM) Specification Rev. 0.93 | | All |
| Kentron Quad Band Memory (QBM), QBM2 Technical Highlights | April 1, 2005 | All |
| Kentron Quad Band Memory (QBM), QBM2 Technology Overview | Aug. 20, 2004 | All |
| Kentron's Informational Showing (Item #1341) Presentation to JEDEC entitled "Quad Band Memory: System Level Testing for QBM10R devices at 533 Mbps and 667 Mbps" | June 2, 2003 | |
| Kentron's QBM DDRII Transition Overview | April 15, 2004 | All |

| Title/Description | Date of Use/Knowledge | Page Numbers |
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| Kentron's QBM DDRII Transition Overview | March 20, 2004 | All |
| Micron, Load Reduced DIMM, DDR3 1.35V SDRAM LRDIMM, 32GB (part number MT72JSZS4G72LZ), Data Sheet, one of Micron's early LRDIMM products | 2010 | All |
| Micron, Registered DIMM (RDIMM), DDR3 1.5V SDRAM RDIMM, 2GB, Data Sheet, one of Micron's early RDIMM products | 2009 | All |
| Minutes of December 8, 2011 JC-40 Meeting No. 168 | December 8, 2011 | All |
| Minutes of December 9, 2010 JC-40 Meeting No. 164 | December 9, 2010 | |
| Minutes of June 4, 2012 JC-40 Meeting No. 170 | June 4, 2012 | All |
| Minutes of March 3, 2011 JC-40 Meeting No. 165 | March 3, 2011 | All |
| Minutes of March 5, 2012 JC-40 Meeting No. 169 | March 5, 2012 | All |
| Minutes of September 15, 2011 JC-40 Meeting No. 167 | September 15, 2011 | All |
| QBM Alliance Member Newsletter distribution list | | All |
| QBM Alliance Newsletter, Volume 1, Issue 1 | February 2002 | All |
| QBM Alliance Newsletter, Volume 1, Issue 2 | April 2002 | All |
| QBM Alliance Newsletter, Volume 1, Issue 3 | | All |
| QBM Alliance Newsletter, Volume 2, Issue 1 | late 2002-early 2003 | All |
| QBM Alliance Newsletter, Volume 2, Issue 2 | mid 2003 | All |
| Quad Band Memory ("QBM") | | |
| Samsung Semiconductor Product Selection Guide - Memory and Storage, advertising for sale some of Samsung's early RDIMM products, one of Samsung's early RDIMM products | 2009 | All |
| Samsung, 256 MB DIMM, with eight DDR SDRAM memory chips, 133 MHz, part number M366S3253ETS-C7A | 2003 | All |
| Samsung, DDR3 SDRAM Specification, 240-pin Registered DIMM Based on 1 Gb D-Die 72-bit ECC, one of Samsung's early RDIMM products | 2008 | All |

E. Persons Who May Be Relied Upon

| Prior Art System / Invention Known or Used by Others | Name |
|---|--|
| Quad Band Memory (QBM) System ("QBM") | Kentron Technologies Inc. employee(s) (e.g., Chris Karabatsos, Vasilios Karabatsos, Bob Goodman, Badawi Dweik) |
| Series of proposals sponsored by Intel and presented in JEDEC | Entities and persons attending JEDEC committee meetings where related technology was discussed |

| | |
|--|---|
| meetings in 2010-2012 (“the JEDEC Proposals”), including: <ul style="list-style-type: none"> • Committee Item Number 142.62B • Committee Item Number 158.01 • Committee Item Number 0311.12 • Committee Item Number 0311.13 • Committee Item Number 0311.14 | (including the JC-40 and JC-45 committee meetings). For example: <ul style="list-style-type: none"> • One or more employees of Intel |
|--|---|

II. Prior Art to Asserted 11,093,417

A. U.S. Patents

| Number | Filing Date | Issue Date | Named Inventors | Original Assignees |
|-----------|--------------------|--------------------|--|-------------------------------|
| 7,024,518 | March 13, 2002 | April 4, 2006 | Halbert, John B.; Dodd, James M.; Lam, Chung; Bonella, Randy M.; Holman, Thomas J. | Intel Corporation |
| 7,103,742 | December 3, 1997 | September 5, 2006 | Mailloux, Jeffrey S.; Ryan, Kevin J.; Merritt, Todd A.; Williams, Brett L. | Micron Technology, Inc. |
| 7,363,422 | January 28, 2004 | April 22, 2008 | Perego, Richard; Ware, Fred; Tsern, Ely | Rambus Inc. |
| 7,366,827 | April 25, 2003 | April 29, 2008 | Lee, Dong-Yang | Samsung Electronics Co., Ltd. |
| 8,054,664 | December 15, 2009 | November 8, 2011 | Harashima, Shiro; Tsukada, Wataru | Elpida Memory, Inc. |
| 8,243,488 | October 11, 2011 | August 14, 2012 | Harashima, Shiro; Tsukada, Wataru | Elpida Memory, Inc. |
| 8,275,936 | September 21, 2009 | September 25, 2012 | Haywood, Christopher; Raghavan, Gopal; Xu, Chao | Inphi Corporation |

| Number | Filing Date | Issue Date | Named Inventors | Original Assignees |
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| 8,347,057 | August 13, 2010 | January 1, 2013 | Nishio, Yoji; Ono, Takao | Elpida Memory, Inc. |
| 8,462,535 | July 16, 2012 | June 11, 2013 | Harashima, Shiro; Tsukada, Wataru | Elpida Memory, Inc. |

B. U.S. Patent Application Publications

| Number | Filing Date | Publication Date | Named Inventors |
|--------------|-------------------|-------------------|---|
| 2001/0008006 | February 13, 2001 | July 12, 2001 | Klein, Dean A. |
| 2003/0039151 | August 23, 2002 | February 27, 2003 | Matsui, Yoshinori |
| 2006/0117152 | January 5, 2004 | June 1, 2006 | Amidi, Hossein; Marino, Kelvin A.; Kolli, Satyadey |
| 2006/0277355 | June 1, 2005 | December 7, 2006 | Ellsberry, Mark; Sweere, Paul; Sansur, Michael; Stockton, Grant |

C. Non-Patent Publications

| Title | Publication Date | Page Nos. |
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| Backus, John Backus (1924-2007) 1977 ACM Turing Award lecture | 1978 | All |
| Bohr, “30 Year Retrospective on Dennard’s MOSFET Scaling Paper” | 2007 | All |
| Brown Fundamentals of Digital Logic with VHDL Design, Third Edition | 2009 | All |
| Chen, “The VLSI Handbook, Second Edition,” | 2007 | All |
| Garrou et al “Handbook of 3D Integration” | 2008 | All |
| Haas, “Fully-Buffered DIMM Technology Moves Enterprise Platforms to the Next Level” authored by Jon Haas | 2005 | All |
| IEEE, The Authoritative Dictionary of IEEE Standards Terms, Seventh Edition | 2000 | All |
| Inphi, “Enabling Cloud Computing and Server Virtualization with Improved Power Efficiency” | 2010 | All |
| Inphi, “Inphi to Present at JEDEC's Server Memory Forum 2011” | 2011 | All |
| Jacob, Jacob, Memory Systems Cache, DRAM, Disk | 2008 | All |
| Johnson, “3D Packaging - A Technology Review” | 2005 | All |
| Laplante, Comprehensive Dictionary of Electrical Engineering, Second Edition | 2005 | All |
| Load Decoupling Twinbuffer for LD-DIMM | June 2008 | All |

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| Markus, McGraw-Hill Electronics Dictionary, Fifth Edition | 1994 | All |
| Mead, "Introduction to VLSI Systems" | 1980 | All |
| Micron, "Micron Introduces a New Way to Increase Server Memory Capacity and Improve Performance", | July, 2009 | All |
| Micron, "Micron's LRDIMM Redefines Server Memory Modules", | July, 2009 | All |
| Moore, "Cramming More Components on Integrated Circuits" | 1965 | All |
| Moore, "No Exponential is Forever - But Forever Can Be Delayed." | 2003 | All |
| Nasr, Rami "FBSIM and the Fully Buffered DIMM Memory System Architecture" | 2005 | All |
| Prince, "Semiconductor Memories" | 1983 | All |
| Scientific American | 1977 | All |
| Shannon "A Symbolic Analysis of Relay and Switching Circuits (M.S. thesis) | 1937 | All |
| Synchronous DRAM Architectures, Organizations, and Alternative Technologies (Bruce Jacob) | December 10, 2002 | All |
| Tan, Wafer Level 3-D ICs Process Technology | 2008 | All |
| Turing, "On Computable Numbers" | 1936 | All |
| Vogt, "Fully Buffered DIMM (FB-DIMM) Server Memory Architecture: Capacity, Performance, Reliability, and Longevity" | 2004 | All |
| Washkewicz and JEDEC, DDR3 Memory Buffer - Buffer at the Heart of the LRDIMM Architecture | 2011 | All |
| Wulf, Bill Wulf "Hitting the Memory Wall: Implications of the Obvious." | 1994 | All |

D. Prior Art Systems and Inventions Known or Used by Others²

| Title/Description | Date of Use/Knowledge | Page Numbers |
|--|------------------------------|---------------------|
| DDR3 DIMMs For Servers August 2008 JEDEC Meeting Item #2192.10 | August 27, 2008 | All |
| DDR4 LRDIMM Proposal (Item # 2222.01) | | All |
| Item # 151.01 iMB based DDR4 LR-DIMM Inphi datasheet for a DDR3 LRDIMM isolation Memory Buffer (iMB) | 2011 | All |
| JC-42.5 Minutes of Meeting No. 51 | March 5, 2002 | All |
| JC-42.5 Minutes of Meeting No. 56 | June 3-4, 2003 | All |

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| JC-45 Minutes of Meeting No. 13 | Dec. 6-7, 2006 | All |
| JC-45 Minutes of Meeting No. 14 | March 7-9, 2007 | All |
| JC-45 Minutes of Meeting No. 9 | Dec. 6-9, 2005 | All |
| JC-45, Kentron Informational Showing, Item #2144.00 | September 2006 | All |
| JEDEC presentation | December 1999 | All |
| JEDEC presentation | September 2000 | All |
| JEDEC presentation | September 2002 | All |
| JEDEC, "Server Memory Trends - Past and Future | 2011 | All |
| JEDEC, "Terms, Definitions, and Letter Symbols for Microelectronic Devices" (Standard JESD99B) | 2007 | All |
| JEDEC, Appendix X-Serial Presence Detect (SPD) for Fully Buffered DIMM (Standard 21-C) | 2007 | All |
| JEDEC, FBDIMM - Architecture and Protocol Standard (JESD206) | 2007 | All |
| JEDEC, FBDIMM Advanced Memory Buffer (AMB) (JESD82-20A) | 2009 | All |
| JEDEC, FBDIMM Specification - DDR2 SDRAM Fully Buffered DIMM (FBDIMM) Design Specification (JESD205) | 2007 | All |
| JEDEC, FBDIMM Specification - High Speed Differential PTP Link at 1.5 V (JESD8-18A) | | All |
| JEDEC, Fully Buffered DIMM Design for Test, Design for Validation (DFx) (JESD82-28A) | 2008 | All |
| JEDEC, Instrumentation Chip Data Sheet for FBDIMM Diagnostic Senselines (JESD82-22) | 2006 | All |
| JEDEC, PC133 SDRAM Registered DIMM Design Specification, Revision 1.4 (Standard 21-C) | 2002 | All |
| JEDEC, PC2-4200, PC2-3200 DDR2 Registered Mini-DIMM Design Specification, Revision 2.0 | 2006 | All |
| JEDEC, PC2-6400, PC2-5300, PC2-4200, PC2-3200 Registered DIMM Design Specification, Revision 4.04 | 2010 | All |
| JESD 79-2A (JEDEC DDR2 SDRAM Standard) | January 2004 | All |
| Kentron presentation | 2004 | All |
| Kentron Quad Band Memory (QBM) QBM2 Overview: Technical Features | Dec. 30, 2004 | All |
| Kentron Quad Band Memory (QBM) Specification Rev. 0.93 | | All |
| Kentron Quad Band Memory (QBM), QBM2 Technical Highlights | April 1, 2005 | All |
| Kentron Quad Band Memory (QBM), QBM2 Technology Overview | Aug. 20, 2004 | All |

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| Micron, Load Reduced DIMM, DDR3 1.35V SDRAM LRDIMM, 32GB (part number MT72JSZS4G72LZ), Data Sheet, one of Micron's early LRDIMM products | 2010 | All |
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| QBM Alliance Newsletter, Volume 1, Issue 1 | February 2002 | All |
| QBM Alliance Newsletter, Volume 1, Issue 2 | April 2002 | All |
| QBM Alliance Newsletter, Volume 1, Issue 3 | | All |
| QBM Alliance Newsletter, Volume 2, Issue 2 | late 2002-early 2003 | All |
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III. Prior Art to Asserted 7,619,912**A. U.S. Patents**

| Number | Filing Date | Issue Date | Named Inventors | Original Assignees |
|---------------|--------------------|--------------------|--|---------------------------|
| 7,024,518 | March 13, 2002 | April 4, 2006 | Halbert, John B.; Dodd, James M.; Lam, Chung; Bonella, Randy M.; Holman, Thomas J. | Intel Corporation |
| 8,054,664 | December 15, 2009 | November 8, 2011 | Harashima, Shiro; Tsukada, Wataru | Elpida Memory, Inc. |
| 8,243,488 | October 11, 2011 | August 14, 2012 | Harashima, Shiro; Tsukada, Wataru | Elpida Memory, Inc. |
| 8,275,936 | September 21, 2009 | September 25, 2012 | Haywood, Christopher; Raghavan, Gopal; Xu, Chao | Inphi Corporation |
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| Backus, John Backus (1924-2007) 1977 ACM Turing Award lecture | 1978 | All |
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| Chen, "The VLSI Handbook, Second Edition," | 2007 | All |
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| IEEE, The Authoritative Dictionary of IEEE Standards Terms, Seventh Edition | 2000 | All |
| Inphi, "Enabling Cloud Computing and Server Virtualization with Improved Power Efficiency" | 2010 | All |
| Inphi, "Inphi to Present at JEDEC's Server Memory Forum 2011" | 2011 | All |
| Jacob, Jacob, Memory Systems Cache, DRAM, Disk | 2008 | All |
| Johnson, "3D Packaging - A Technology Review" | 2005 | All |
| Laplanche, Comprehensive Dictionary of Electrical Engineering, Second Edition | 2005 | All |
| Load Decoupling Twinbuffer for LD-DIMM | June 2008 | All |
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| Moore, "Cramming More Components on Integrated Circuits" | 1965 | All |
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| Prince, "Semiconductor Memories" | 1983 | All |
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| Vogt, "Fully Buffered DIMM (FB-DIMM) Server Memory Architecture: Capacity, Performance, Reliability, and Longevity" | 2004 | All |
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| JEDEC, Appendix X-Serial Presence Detect (SPD) for Fully Buffered DIMM (Standard 21-C) | 2007 | All |
| JEDEC, FBDIMM - Architecture and Protocol Standard (JESD206) | 2007 | All |
| JEDEC, FBDIMM Advanced Memory Buffer (AMB) (JESD82-20A) | 2009 | All |
| JEDEC, FBDIMM Specification - DDR2 SDRAM Fully Buffered DIMM (FBDIMM) Design Specification (JESD205) | 2007 | All |
| JEDEC, FBDIMM Specification - High Speed Differential PTP Link at 1.5 V (JESD8-18A) | | All |
| JEDEC, Fully Buffered DIMM Design for Test, Design for Validation (DFx) (JESD82-28A) | 2008 | All |
| JEDEC, Instrumentation Chip Data Sheet for FBDIMM Diagnostic Senselines (JESD82-22) | 2006 | All |
| JEDEC, PC133 SDRAM Registered DIMM Design Specification, Revision 1.4 (Standard 21-C) | 2002 | All |
| JEDEC, PC2-4200, PC2-3200 DDR2 Registered Mini-DIMM Design Specification, Revision 2.0 | 2006 | All |

³ Samsung's identification of prior art in this section should not be construed as an admission that such prior art does not also qualify as another category of prior art such as a printed publication.

| Title/Description | Date of Use/Knowledge | Page Numbers |
|--|------------------------------|---------------------|
| JEDEC, PC2-6400, PC2-5300, PC2-4200, PC2-3200 Registered DIMM Design Specification, Revision 4.04 | 2010 | All |
| Kentron presentation | 2004 | All |
| Kentron Quad Band Memory (QBM) QBM2 Overview: Technical Features | Dec. 30, 2004 | All |
| Kentron Quad Band Memory (QBM) Specification Rev. 0.93 | | All |
| Kentron Quad Band Memory (QBM), QBM2 Technical Highlights | April 1, 2005 | All |
| Kentron Quad Band Memory (QBM), QBM2 Technology Overview | Aug. 20, 2004 | All |
| Micron, Load Reduced DIMM, DDR3 1.35V SDRAM LRDIMM, 32GB (part number MT72JSZS4G72LZ), Data Sheet, one of Micron's early LRDIMM products | 2010 | All |
| Micron, Registered DIMM (RDIMM), DDR3 1.5V SDRAM RDIMM, 2GB, Data Sheet, one of Micron's early RDIMM products | 2009 | All |
| QBM Alliance Member Newsletter distribution list | | All |
| QBM Alliance Newsletter, Volume 1, Issue 1 | February 2002 | All |
| QBM Alliance Newsletter, Volume 1, Issue 2 | April 2002 | All |
| QBM Alliance Newsletter, Volume 1, Issue 3 | | All |
| QBM Alliance Newsletter, Volume 2, Issue 2 | late 2002-early 2003 | All |
| QBM Alliance Newsletter, Volume 2, Issue 2 | mid 2003 | All |
| Quad Band Memory ("QBM") | | |
| Samsung Semiconductor Product Selection Guide - Memory and Storage, advertising for sale some of Samsung's early RDIMM products, one of Samsung's early RDIMM products | 2009 | All |
| Samsung, 256 MB DIMM, with eight DDR SDRAM memory chips, 133 MHz, part number M366S3253ETS-C7A | 2003 | All |
| Samsung, DDR3 SDRAM Specification, 240-pin Registered DIMM Based on 1 Gb D-Die 72-bit ECC, one of Samsung's early RDIMM products | 2008 | All |

E. Persons Who May Be Relied Upon

| Prior Art System / Invention Known or Used by Others | Name |
|---|--|
| Quad Band Memory (QBM) System ("QBM") | Kentron Technologies Inc. employee(s) (e.g., Chris Karabatsos, Vasilios Karabatsos, Bob Goodman, Badawi Dweik) |

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CERTIFICATE OF SERVICE

I certify that on March 29, 2024, a true and correct copy of the foregoing was served on counsel of record for Plaintiff via electronic mail.

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